

Work Order ID 142760 -2.

Friday, March 11, 2016 1:02:15 PM

142760

Page 1

Item ID: D2432

Revision ID:

Item Name: Bearpaw 19" X 24"

Start Date: 4/8/2016 Start Qty: 12.00

Required Date: 5/13/2016 Req'd Qty: 12.00

Reference:

Accept

N900040100

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

Customer:

Approvals: Process Plan: MLJ Date: MAR 14 2016

QC: _____ Date: _____ SPC (Y/N): _____

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D2432	H								

120

120

Waterjet

FLOW CNC Waterjet

FLOW WATER JET

Memo

Cut Blank as per D2432 File

0.00

0.03

(16)

02/16/03/29

130

130

HAAS 1

HAAS CNC vertical machine #1

HAAS CNC VERTICAL MACHINING #1

Memo

1-Inspect material for defects or damage prior to machining
2-Machine as per Folio and Dwg D2432 Identify as D2432F
3-Deburr

0.01

0.09

(16)

160404

DAS
44
9-09

16/04/06

140

140

QC

Quality Control

QC2- Inspect parts off machine FAI/FAIB

Memo

0.00

0.00

8

160404

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐				

Work Order ID 142760

Friday, March 11, 2016 1:02:15 PM

142760

Page 2

Item ID: D2432

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Bearpaw 19" X 24"

Stop

NS2

Start Date: 4/8/2016 Start Qty: 12.00

12

Cust Item ID:

Required Date: 5/13/2016 Req'd Qty: 12.00

12

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

NR1

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	QC8- Inspect parts - second check	0.00				8	0		DAS 14 9-89 16/04/08
150									
QC	Memo	0.00							
Quality Control									
160	Identify as per dwg & Stock Location <u>SL430A</u>	0.00				8			DAS 6 9-89 APR 08 2016
160									
Packaging	Memo	0.00							
Packaging									
170	QC21- Final Inspection - Work Order Release	0.00							
170									
QC	Memo	0.02							
Quality Control									

ML5 APR 11 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
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OTHER : ☐					

Picklist Print

Friday, March 11, 2016 1:02:19 PM

Page 1

Work Order ID: 142760

142760

Parent Item: D2432

D2432

Parent Item Name: Bearpaw 19" X 24"

Start Date: 4/8/2016

Required Date: 5/13/2016

Start Qty: 12.00

Required Qty: 12.00

Comments: IPP REV:A 12.10.17 AS PER DWG REV.H DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MUHMWB10		Purchased	No			120	sf	597.8730	3.7	44.4			

MIJHMWB10

UHMW 1" Black - 48"x120" Tivar Mfg.#52480104

02/16/03/29

Location

Loc Qty

Loc Code

MAT

196.4

m134171

196.4

MAT018

401.473

m131661

1.473

m134372

400

63

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

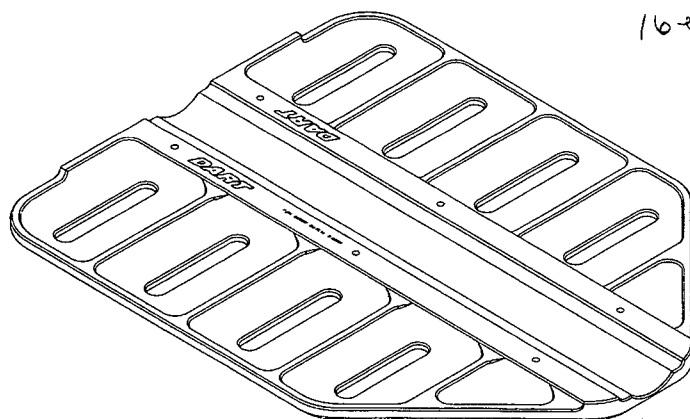
QA Closed: _____ Date: _____

Work Order update only ☐

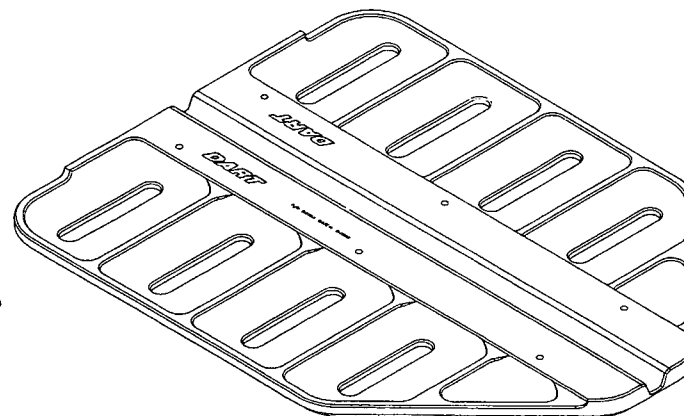
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 ENG. 10-10-10
 UNCOMMERCEABLE COPY
 SUBJECT TO APPROVAL
 WITH ALL MOD. &
 WORK ORDER
 NO. 142760 M.C.S

16-03-14



D2432F BEARPAW



D2432-3 BEARPAW

RELEASED
 2012-10-16

REV.	DESCRIPTION	BY	DATE
H	RIB HEIGHTS CHANGED TO CONDITION OF REV. F. SEE REV. F FOR DETAILS.	AP	12.09.24
G	UPDATE DRAWING FORMAT REMOVED D2432B, ADD D2432-3, ADDED DIMENSION 7.52 (D1-2)	AP	12.05.02
F	CHANGE C'BORE, ADD B AND F P/N	-	96.05.12
E	CHANGE C'BORE DEPTH, BORE RADIUS	-	97.02.27
D	MOVE SLOT	-	96.06.04
C	CHANGE BORE AND C'BORE DEPTH	-	96.03.26
B	RE-DESIGN	-	95.01.24
A	NEW ISSUE	-	95.10.31
DESIGN	LE	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AP		
CHECKED	ASS	DRAWING NO.	REV. H
MFG. APPR.	AP	D2432	SHEET 1 OF 3
APPROVED	AP	TITLE	SCALE
DE APPR.	AP	BEARPAW	NTS
DATE	12.09.24	COPYRIGHT © 1995 BY DART AEROSPACE LTD THIS DOCUMENT IS UNCLASSIFIED AND CONTAINS NO INFORMATION THAT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON OR ENTITY WITHOUT PERMISSION FROM DART AEROSPACE LTD	

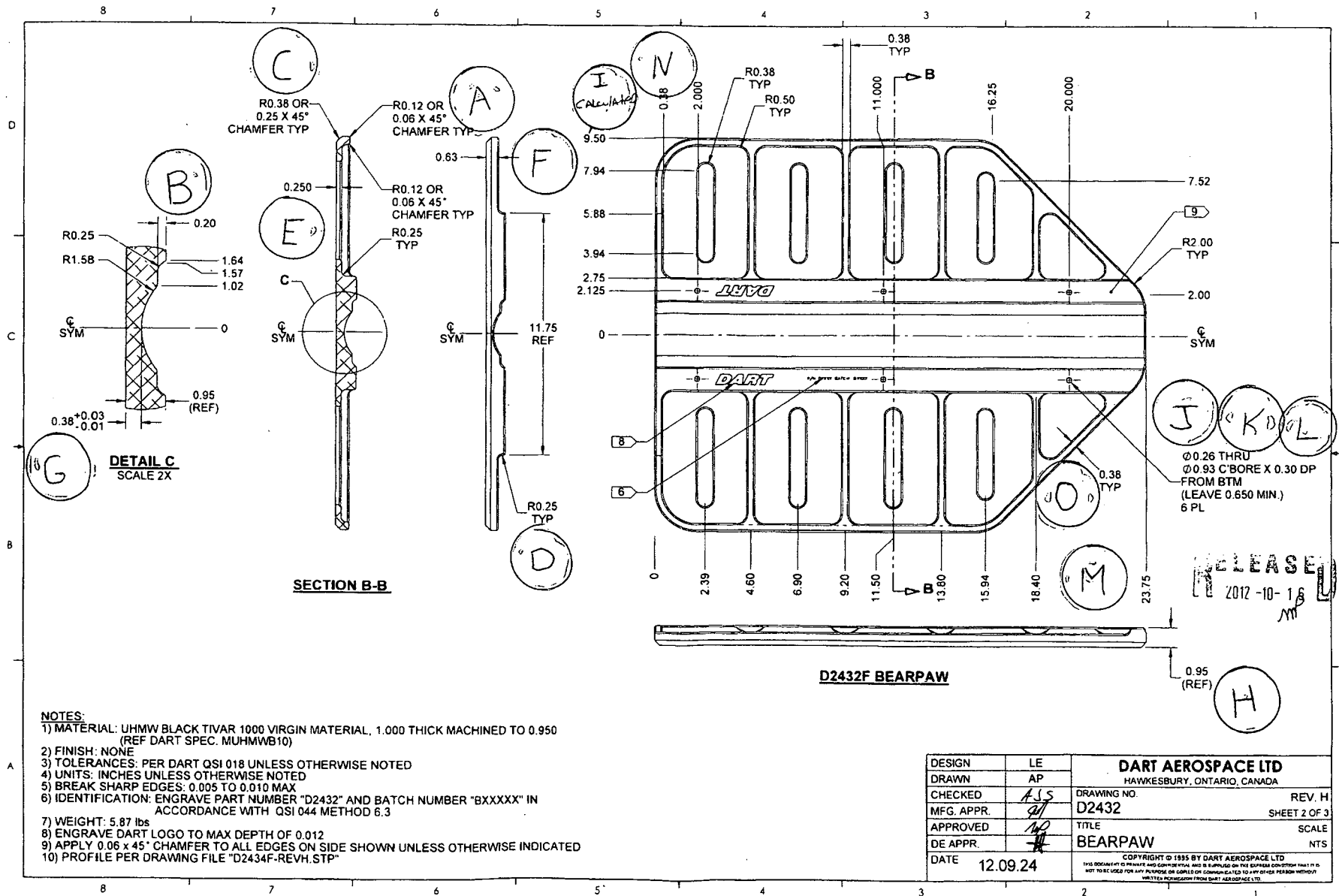
DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

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OTHER : ☐					



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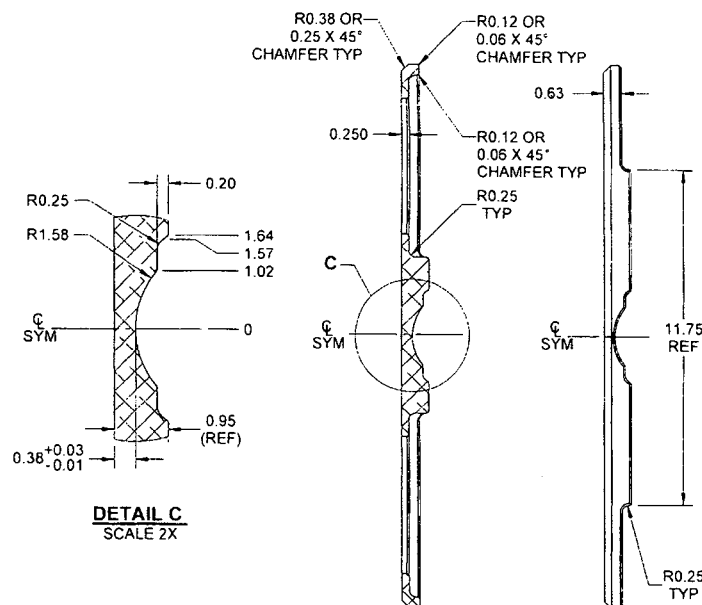


WORK ORDER NON-CONFORMANCE / UPDATE

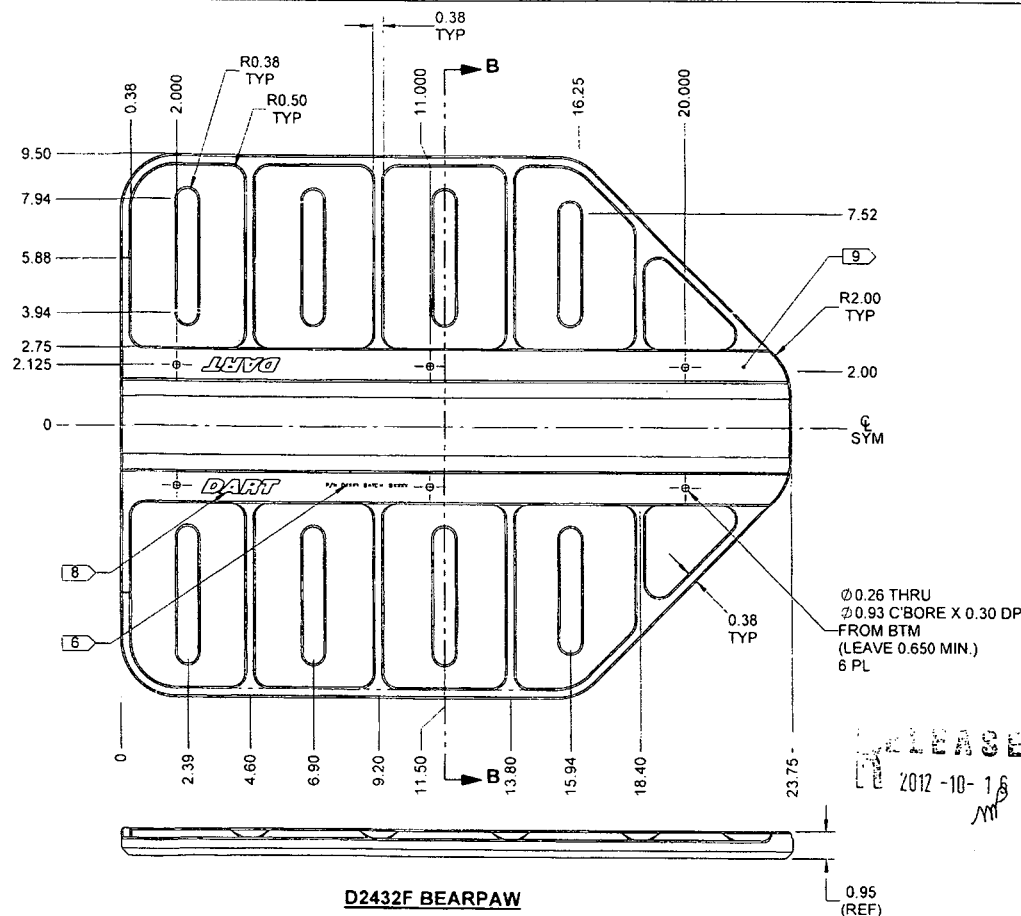
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		OTHER : ☐			



SECTION B-B



NOTES:

- 1) MATERIAL: UHMW BLACK TIVAR 1000 VIRGIN MATERIAL, 1.000 THICK MACHINED TO 0.950 (REF DART SPEC. MUHMWB10)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: ENGRAVE PART NUMBER "D2432" AND BATCH NUMBER "BXXXXX" IN ACCORDANCE WITH QSI 044 METHOD 6.3
- 7) WEIGHT: 5.87 lbs
- 8) ENGRAVE DART LOGO TO MAX DEPTH OF 0.012
- 9) APPLY 0.06 x 45° CHAMFER TO ALL EDGES ON SIDE SHOWN UNLESS OTHERWISE INDICATED
- 10) PROFILE PER DRAWING FILE "D2434F-REVH.STP"

DESIGN	LE	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AP		
CHECKED	ASS	DRAWING NO.	REV. H
MFG. APPR.	21	D2432	SHEET 2 OF 3
APPROVED	140	TITLE	SCALE
DE APPR.	A	BEARPAW	NTS
DATE	12.09.24	COPYRIGHT © 1995 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

DQA: _____ Date: _____

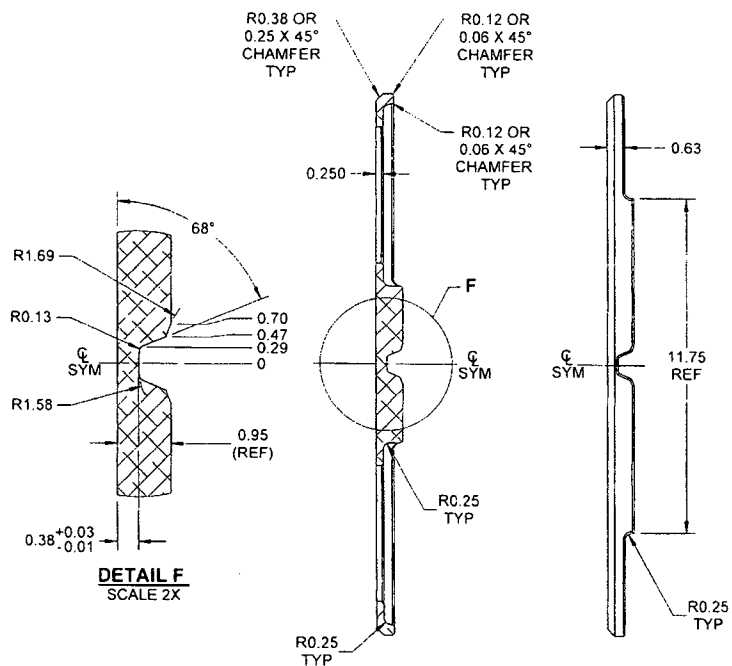


WORK ORDER NON-CONFORMANCE / UPDATE

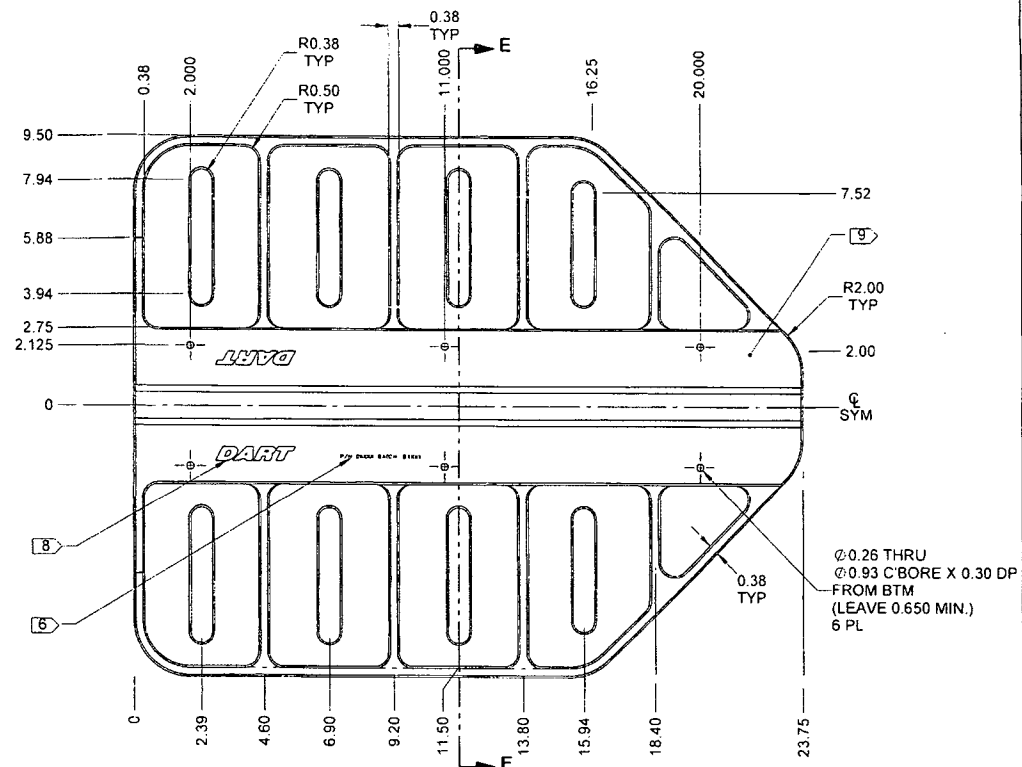
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																
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OTHER :																																																																				



SECTION E-E



D2432-3 BEARPAW

NOTES:

- 1) MATERIAL: UHMW BLACK TIVAR 1000 VIRGIN MATERIAL, 1.000 THICK MACHINED TO 0.950 (REF DART SPEC. MUHMWB10)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: ENGRAVE PART NUMBER "D2432-3" AND BATCH NUMBER "BXXXXX" IN ACCORDANCE WITH QSI 044 METHOD 6.3
- 7) WEIGHT: 6.25 lbs
- 8) ENGRAVE DART LOGO TO MAX DEPTH OF 0.012
- 9) APPLY 0.06 x 45° CHAMFER TO ALL EDGES ON SIDE SHOWN UNLESS OTHERWISE INDICATED
- 10) PROFILE PER DRAWING FILE "D2432-3-REVH.STP"

REVISION
2012-10-16

DESIGN	LE	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AP		
CHECKED	ASS	DRAWING NO.	REV. H
MFG. APPR.	AP	D2432	SHEET 3 OF 3
APPROVED	AP	TITLE	SCALE
DE APPR.	AP	BEARPAW	NTS
DATE	12.09.24	COPYRIGHT © 1995 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL. NO DISSEMINATION OR REPRODUCTION OF THIS DOCUMENT IS PERMITTED WITHOUT THE WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐				
Misidentified ☐	Past Due ☐	OTHER : ☐			

DART AEROSPACE LTD		Work Order: 142760
Description: Bearpaw		Part Number: D2432
Inspection Dwg: D2432 Rev: H		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
A	0.063 x 45°	+0.030/-0.010	0.060	✓		
B	0.200	+/-0.030	0.197	✓		
C	0.25 x 45°	+/-0.030	0.260	✓		
D	R0.250	+/-0.030	0.250	✓		
E	0.250	+/-0.010	0.255	✓		
F	0.625	+/-0.030	0.630	✓		
G	0.375	+0.030/-0.010	0.380	✓		
H	0.950	+/-0.030	0.960	✓		
I	19.000	+/-0.030	19.00	✓		
J	Ø0.260	+0.005/-0.000	0.260	✓		
K	Ø0.93	+/-0.030	0.930	✓		
L	0.30	+0.030/-0.000	0.300	✓		
M	23.750	+/-0.030	23.75	✓		
N	2.000	+/-0.030	2.000	✓		
O	0.38	+/-0.030	0.375	✓		
P						
Q						
R						
S						
T						
U						
V						

Measured by: <i>[Signature]</i>	Audited by: <i>[Signature]</i>	Preliminary Approval:
Date: 16/04/04	Date: 16/04/08	Date:

Rev	Date	Change	Revised by	Approved
A	04.01.09	New Issue P/O D206-559-015	KJ/RF	
B	12.07.31	Dwg Rev updated	KJ	
C	12.10.26	Dwg Rev updated	KJ	
D	13.07.18	Dimension 7.375 removed	KJ	
E	15.02.09	Dimensions revised	KJ	<i>[Signature]</i>

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
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Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
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